CURRICULUM VITAE
John Middleditch
10May10

Personal Details

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Education

1964-68	B. S. physics, honors, California Institute of Technology
1968-75	Ph. D. physics, University of California, Berkeley, 1976, Thesis advisors, Eugene Commins/Jerry Nelson
1977	Course in solid state physics, U. California, Berkeley,
1997	Audited ME-562 (graduate mechanics) UNM
2006	Topics in Modeling (Queue Theory) Simon Frasier U, BC, Canada

Positions

1988.35 - present	Staff, LANL (C-3, CIC-19,3, CCS-3)
1980.75 - 1988.35	" " " (NIS-2)
1976.83-80.75	Physicist P4, Lawrence Berkeley Laboratory
1975.92-76.83	Visiting Professor at the Asiago Astrophysical Observatory of the University of Padua, Italy

Research Interests	Rapid time variablity in astronomical sources
	pulsars: binary, X-ray, radio/optical ms, QPO/noisars,
	Galactic center, gamma-ray bursts, supernovae
	Image reconstruction techniques
	Computational techniques
Professional Societies	American Astronomical Society
Experience with systems	Windows, LINUX, UNICOS, CTSS, LTSS, NOS
Experience with computers	QSC, FLASH, Turing, Yellowtail, PC's
FORTRAN Experience	since 1962, many large programs, FORTRAN77, FORTRAN90
	Large (out of core) Fourier transform
	with 2 levels of memory (Cray-1, XMP, YMP, CDC 6400 6600
	with 3 levels of memory (7600)
	Large (in core) Fourier transform (Cray M98)
Other Languages	CAL (lots), C, knowledge of C++
	Spanish, Italian, some French
Other Experience	Multi-dimensional FFT's, Image processing/deconvolution
	Lots of data handling
	Interfacing Statistical Crack Mechanics to PRONTO & DYNA3D –
	a finite element Lagrangian solid materials code
	vectorized
Graphics Experience	wrote own graphics package, contour plotter
	Interfaced to CA-DISSPLA
	Interfaced to cgs & fonts
Future Development	Parallel Fourier/Fresnel search for drifting signals
	Fast, parallel search for trains of harmonics.
	FFT GUI?? On site full analysis platform? (Pending Keck time, etc.)

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Scientific Acomplishments	First mass and spin sense measurements of a neutron star
	First inclination-independent measurement of an unresolved binary system (P$\sim$2500s – 4U1626-67) outside of the solar system and second spin sense measurement of a neutron star
	Discovery of a 50 ms young optical pulsar in the LMC (0540-69)
	SPARTAN-1 imaging analysis of Galactic Center
	Simultaneous co-discovery of rapid QPO in the Galactic Bulge X-ray sources (in this case, Sco X-1)
	Discovery of the first pulsar (3 ms) in a globular cluster (1821-24)
	Discovery of the first pulsar in a globular cluster with a negative pdot
	" a 2.14 ms optical psr in SN1987A which precesses and slows via GR
	" the fastest young pulsar (62 Hz) in any supernova remnant (N157B)
	First accurate glitch prediction for any pulsar (PSR J0537-6910)
	First (decent) argument against SN Ia Cosmology and Dark Energy
Activities at LANL	2007-2010 Superluminal Applications Group, DR20080085
	2008 HPC File Structure Performance Project
	2008 Web support of CCS-3
	2005-10 CMPC for CCS-3
	2005-07 RAGE code test support & diagnostics
	2004-05 W88 Certification Team
	1998-10 ADC for CCS-3
	1993-98 Large Data Sets Specialist
	1993-94 Housecalls Program
	1992-04 Modeling Support for AGEX Surety/HEVR Programs
	1990-97 Coach/advisor for NM Technet Supercomputing Challenge
	1988-99 FFT algorithm specialist, C-3, CIC-3
	1988-97 Observational astronomer C-3
	1984-88 Imaging specialist for SPARTAN 1
	1982-88 Support astronomer, SPARTAN-1, URA, SSO-2
	1980-88 Observational astronomer SSO-2

Selected Publications

J. Middleditch, 2010 "Pulsar-Driven Jets in Supernovae, Gamma-Ray Bursts, Low Mass X-Ray Binaries, and SS 433" , in prepration

J. Singleton, P. Sengupta, J. Middleditch, T. L. Graves, M. R. Perez, H. Ardavan, & A. Ardavan, 2009 "A Maximum-Likelihood Analysis of Observational Data on Fluxes and Distances of Radio Pulsars: Evidence for Violation of the Inverse-Square Law" *Phys. Rev. Lett.*, submitted;arXiv:0912.350

J. Middleditch, 2009 "Pulsed Gamma-Ray-Burst Afterglows" , arXiv:0909.2604

J. Middleditch, 2006 "Predicting the Starquakes in PSR J0537-6910" *The Astrophysical Journal*, 652,1531-1546

J. Middleditch, J. Kristian, W. Kunkel *et al.*, 2000 "Rapid Photometry of Supernova 1987A: A 2.14 ms Pulsar?", *New Astronomy*, **5**, 243-283

A. G. Lyne, A. Brinklow, J. Middleditch, D. C. Backer, & T. R. Clifton, 1987 "The discovery of a millisecond pulsar in the globular cluster M28", *Nature*, **313**, 659-661.

J. Middleditch & C. R. Pennypacker, 1985 "Optical pulsations in the large Magellanic Cloud Remnant 0540-69.3", *Nature*, **313**, 659-661.

J. Middleditch, K. O. Mason, J. E. Nelson, 1981 "4U 1626-67 - A prograde spinning X-ray pulsar in a 2500 s binary system", *The Astrophysical Journal*, **244**, 1001-1021.

J. Middleditch, & J. Nelson, 1976 "Studies of optical pulsations from HZ Her/Her X-1: a determination of the mass of the neutron star", *The Astrophysical Journal*, **208**, 567-586.